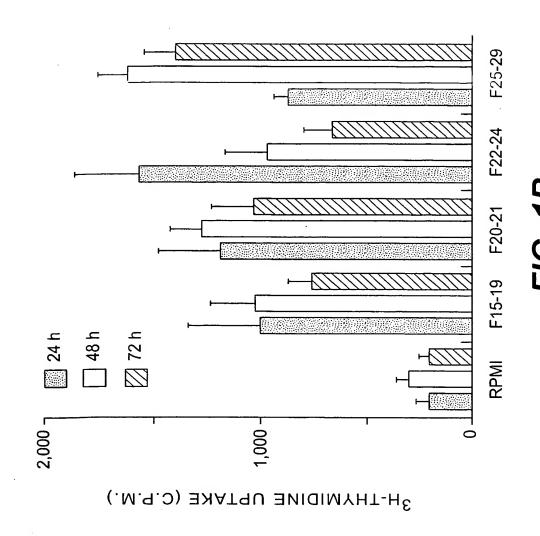
RPMI 0.07 0.15 0.3 0.6 1.25 2.5 10 ა RPMI 0.07 0.15 0.3 0.6 1.25 2.5 Replacement Figure 1A
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000 48 h 9 **7**2h 2 RPMI 0.07 0.15 0.3 0.6 1.25 2.5 48h 24 h 24 h 1,000,1 2,000 -5,000 ₇ 1,000,1 3,000

 3 H-THYMIDINE UPTAKE (C.P.M.)

FIG. 1A

TOTAL SN (µg/ml)

Replacement Figure 1B
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000



Replacement Figure 1C Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

HPLC FRACTIONS

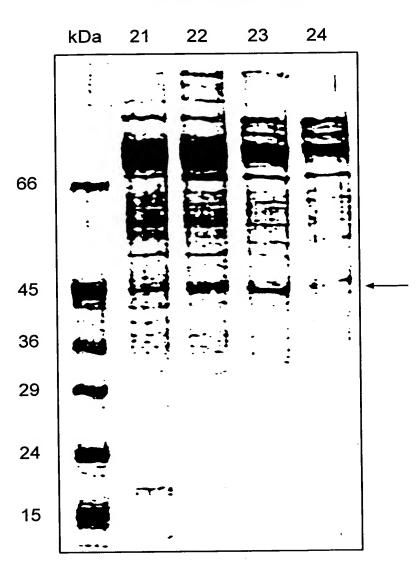


FIG. 1C

Replacement Figure 2
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

| Tc Cs Pa | MRKSVCPKQKFFFSAFPFFFFCVFPLISRTGQEKLLFDQKYKIIKGEKKEKKKNQRANRREHQQKREIMRFKKS | 75 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Tc | FTCIDMHTEGEAARIVTSGLPHIPGSNMAEKKAYLQENMDYLRRGIMLEPRGHDDMFGAFLFDPIEEGADLGMVF | 150 |
| Cs | IHAIDSHTMGEPTRIVVGGIPQINGETMADKKKYLEDNLDYVRTALMHEPRGHNDMFGSIITSSNNKEADFGIIF | 81 |
| Pa | IRIIDSHTGGEPTRLVIGGFPDLGQGDMAERRRLLGERHDAWRAACILEPRGSDVLVGALLCAPVDPEACAGVIF | 78 |
| Tc | MDTGGYLNMCGHNSIAAVTAAVETGIVSVPAKATNVPVVLDTPAGLVRGTAHLQSGTESEVSNASIINVPSFLYQ | 225 |
| Cs | MDGGGYLNMCGHGSIGAATVAVETGMVEMVEPVTNINMEAPAGLIKAKVMVENEKVKEVSITNVPSFLYM | 151 |
| Pa | FNNSGYLGMCGHGTIGLVASLAHLGRIGPGVHRIETPVGEVEATLHEDGSVSVRNVPAYRYR | 140 |
| Tc | ODVVVVLPKPYGEVRV <i>DIAFGGNF</i> FAIVPAEQLGIDISVQNLSRLQEAGELLRTEINRSVKVQHPQLPHINTVDC | 300 |
| Cs | EDAKLEVPSLNKTITFDISFGGSFFAIIHAKELGVKVETSQVDVLKKLGIEIRDLINEKIKVQHPELEHIKTVDL | 226 |
| Pa | RQVSVEVPGI-GRVSGDIAWGGNWFFLVAGHGQRLAGDNLDALTAYTVAVQQALDDQDIRGEDGGAIDH | 208 |
| Tc | VEIYGPPTNPEANYK <i>NVVIFGN</i> RQADR SPCGT GTSAKMATLYAKGOLRIGETFVYESILGSLFQGRVLGEE | 371 |
| Cs | VEIYDEPSNPEATYKNVVIFGQGQVDR SPCGT GTSAKLATLYKKGHLKIDEKFVYESITGTMFKGRVLEET | 297 |
| Pa | IELFADDPHADSRNFVLCPGKAYDR SPCGT GTSAKLACLAADGKLLPGQPWRQASVIGSQFEGRYEWLDGQ | 279 |
| TC Cs Pa | RIPGVKVPVTKDAEEGMLVVTAEITGKAFIMGFNTMLFDPTDPFKNGFTLKQ* 423 KVGEFDAIIPEITGGAYITGFNHFVIDPEDPLKYGFTV* 335 PGGPIVPTIRGRAHVSAEATLLLADDDPFAWGIRR*314 | |

Replacement Figure 3A Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

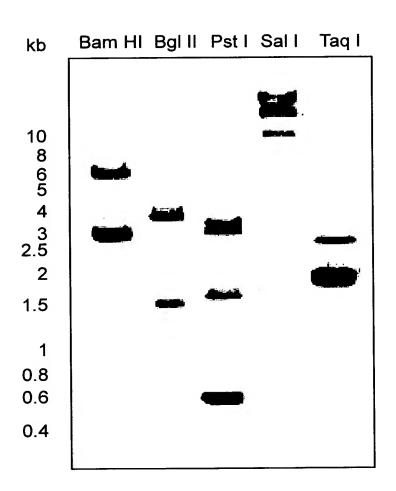


FIG. 3A

Replacement Figure 3B Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

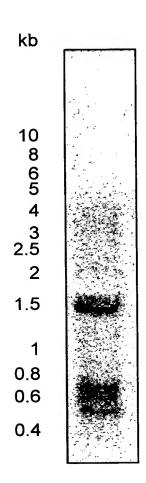


FIG. 3B

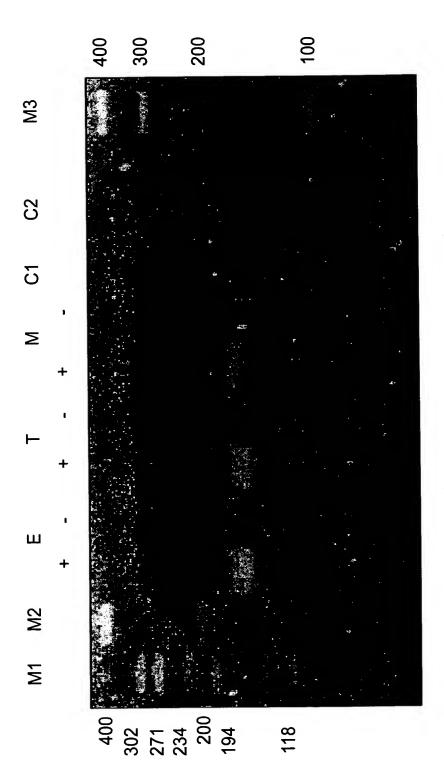


FIG. 3C

Replacement Figure 4A Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

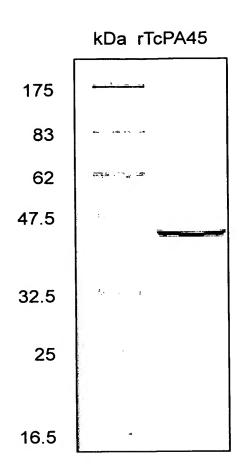


FIG. 4A

RPMI 0.8 1.5 3.1 6.25 12.5 25 100 200 H S RPMI 0.8 1.5 3.1 6.25 12.5 25 Replacement Figure 4B
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000 RPMI 0.8 1.5 3.1 6.2512.5 25 50 100 200 3,000 1,000,1 2,000 -

3H-THYMIDINE UPTAKE (C.P.M.)

FIG. 4B

100 200

ය

72 h

48 h

24 h

Replacement Figure 4C
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

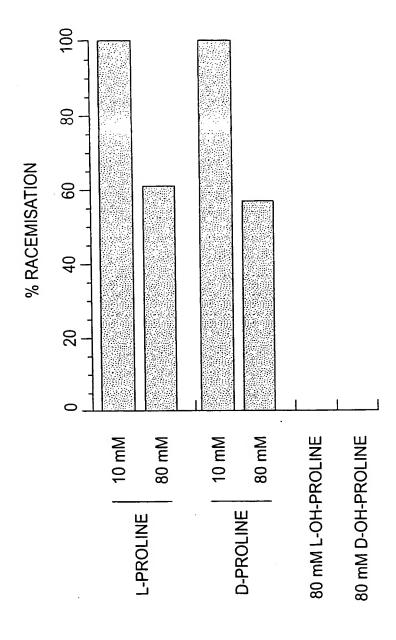


FIG. 4C

Replacement Figure 4D
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

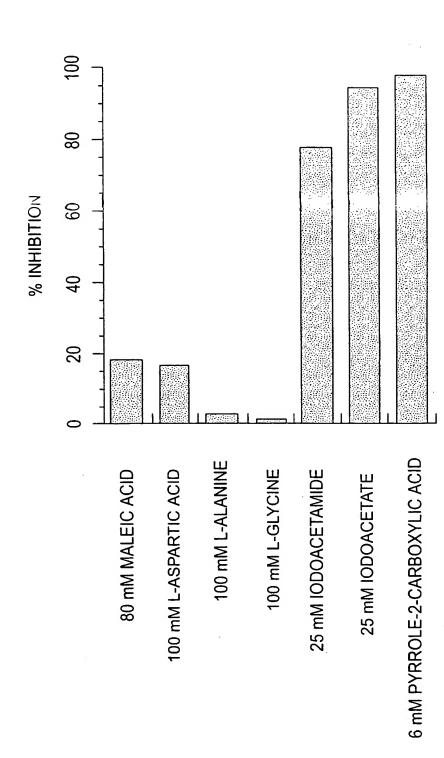
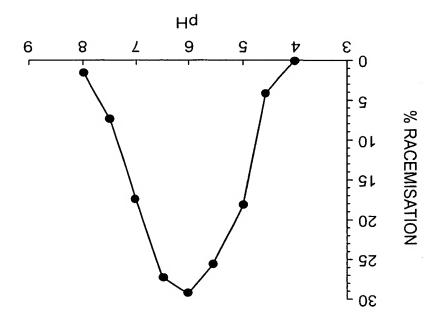


FIG. 4D

EIC: 4E



Replacement Figure 5A
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

POLYPYRIMIDINE RICH REGION

SPLICE LEADER
ACCEPTOR SITES

SIGNAL

180

270 72 360

102 430

132 520

162 610 192 700 222 790 252

42

CGATTT CGAAT GGACAT :TTCAGAGTGGTACTGAGAGTGAGGTGTCAAATGCGAGTATTATCAATGTACCCTCATTT ATGGTGAAGTACGGGTTGATATTGCATTTGGAGGCAATTTTTTCGCCATT $exttt{TTAAAAACAAAAAAAATTCCGGGGGAATATGGAAC<math> exttt{A} exttt{G} exttt{G} exttt{G} exttt{TTTT}$ GGCATAATGCTGGAACCACGTGGTCATGATGATATGTT Z بحا \blacksquare G Ω \mathbf{z} \simeq $\mathbf{\Sigma}$ 9 ш CAAAACCTCTCCAGGCTGCAGGAGGCAGGAGAACTTCTGCGTACT aaaattattaagggccagaaaaagaaaagaaaaaaaaatcaacgagcaaacagggggagagaccaacaaaaaaggggaat Q. \sum TAAATAT !TTTCCGCCTTCCCATTTTTTTTTTTTTTTGTGTGTTTCCCTTGATCTCTCGAACA&GGGAAAAAAGCTTCTGTTT $|\mathbf{x}|$ ဌ 二 GTGCCGGCGAAGGCAACAAATGTTCCGGT1 Z \geq \geq α μ G œ \blacksquare Д 9 'TCATGGATACCGGTGGCTATT Д α 9 × Õ Д G Z ဌ ĿЭ Ŏ 5 G S ഗ ഥ E Ø Ø GTGACGAGT 田 S 一 ⊱ K G 드기 ⊢ \mathbf{z} \Box × ഗ α > \mathbf{z} Ø > > GAAGCAGCACGGATT G \simeq لعتا 一 \propto Д 凶 ഥ TGGGCATGGTAT TGAGGCGT လ Z 2 α >က > GTGAGC Ø Ø α $\mathbf{\Sigma}$ S ഥ ഥ 24 Ø щ Ġ \Box **—** G Д Õ ᆸ GAAACGGGAATT ഥ 9 \geq AAGAAATCATTCACATGCATCGACATGCATACGGAAGGT ഥ \geq G G ഗ × ᇤ > \geq K ATGGCGGAGAAGAAGCATACCTGCAGGAAAACAT ⋿ Ŏ ATTGAAGAAGGC ى × ⊱ \geq G ഥ ᅳ Д ᄺ × 出 ᇤ ഥ > ᆸ \blacksquare TGGTGCGCGGTACGGCA ᇤ $\mathbf{\Sigma}$ Õ ഥ Ø K \simeq П Ø TTTGACCCT \succeq Ы ⊱ G \triangleright 9 TTGTATCAGCAGGATGTGGT [--ഥ ى Ø > α Ы G Ę × K > Ŏ V بيتا × استا \simeq Ø 6066661 Ø လ G **3GAGCCT** S \simeq Ø Ø K G $\mathbf{\Sigma}$

FIG. 5A

| CGCAGTGTGAAGGTTCAGCACCCTCAGCTGCCCCATATTAACACTGTGGACTGTGTTGAGATATACGGTCCGCCAACGAACCCGGAGGCA | 97(|
|----------------------------------------------------------------------------------------------------|---------|
| RSVKVOHPOLPHINTVDCVEIYGPPTNPEA | 312 |
| <u> AACTACAAGAACGTTGTGATATTTGGCAATCGCCAGGCGGATCGCTCTCCATGTGGGACAGGCACCAGCCCCAAGATGGCAACACTTTAT</u> | 106(|
| NYKNVVIFGNROADRSPCGTGTSAKMATLY | 342 |
| GCCAAAGGCCAGCTTCGCATCGGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTTCCAGGGCAGGGTACTTGGGGAGGAGCGA | 115(|
| A K G Q L R I G E T F V Y E S' I L G S L F Q G R V L G E E R | 37, |
| ATACCGGGGGTGAAGGTGCCGGTGACCAAAGATGCCGAGGAAGGGATGCTCGTTGTAACGGCAGAAATTACTGGAAAGGCTTTTATCATG | 124(|
| IPGVKVPVTKDAEEGMLVVTAEITGKAFIM | 405 |
| | 133(|
| G F N T M L F D P T D P F K N G F T L K Q | 42. |
| | 142(|
| | |
| ATTATTAAATTTTTTTTTTTGGGTTTCAACGGTACCGCGTTGGGAGCAGGGAAGCGATAGCGGCCGGC | 151(|
| | , |
| TTTCATTTTCATCTTCCTACCCCAACCCCCTTGGTTCCACCGGTCGCGGGGGGTTTTTGTGGGTGG | 100(|
| | , |
| AGGAATAAACATATTTCAATTTCTTGGAATCAAAGGCAT | T 6 2 T |
| | |

NUCLEOTIDE SEQUENCE AND PEPTIDE SEQUENCE TCPA45

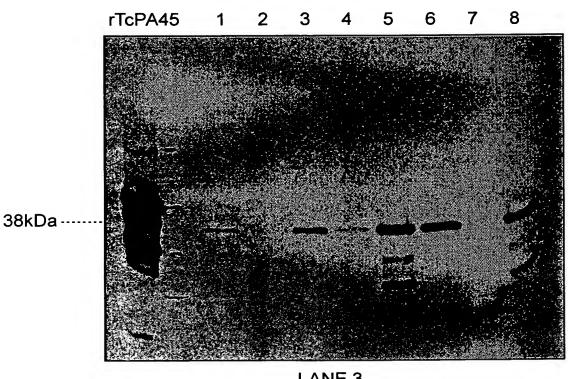
OBS: UNDERLINED THE SEQUENCED PEPTIDES USED TO DEDUCE DEGENERATED PRIMERS FOR CLONING

POLYADENILATION SITE

FIG. 5B

Replacement Figure 6 Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

WESTERN BLOT



LANE 3

SOLUBLE FRACTION OF EPIMASTIGOTES EXTRACT (CYTOSOLIC) REVEALED WITH ANTIBODY DIRECTED TO rTcPA45

..... DEMONSTRATES THE EXISTANCE OF AN INTRACYTOPLASMIC FORM OF TcPA45 IN THE PARASITE

FIG. 6

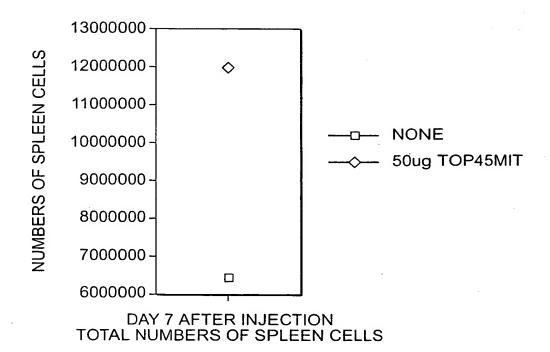
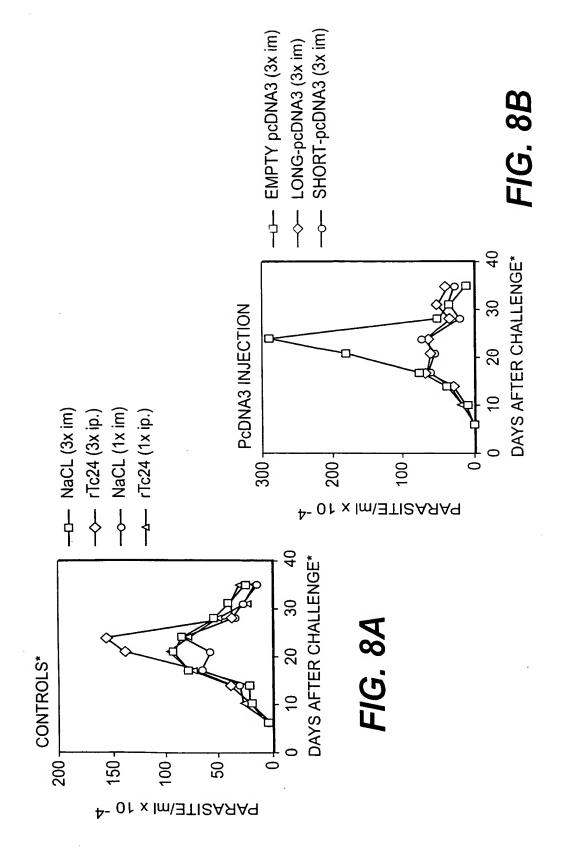
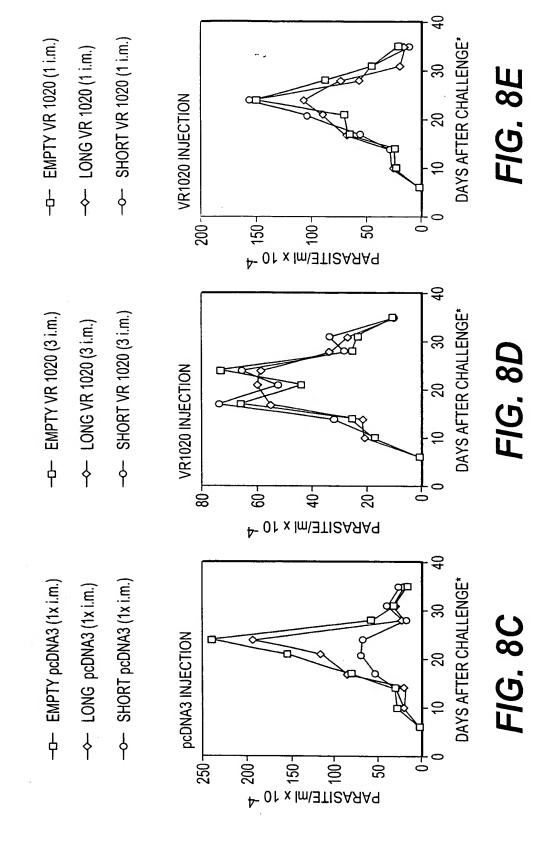
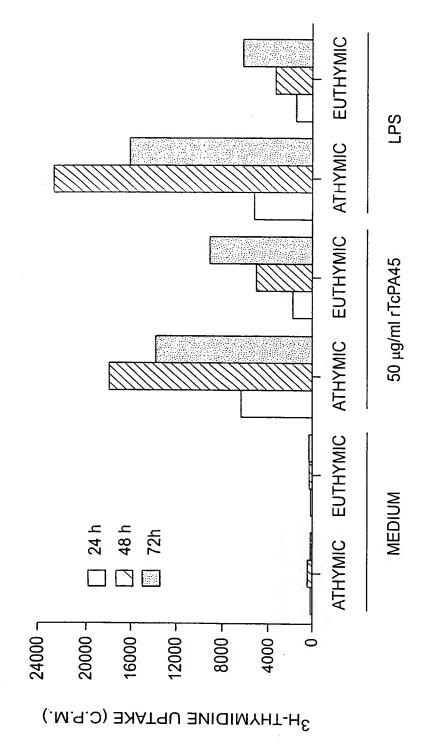


FIG. 7







Replacement Figure 10A
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

Alexa-F (ab')2 Chronic serum





METACYCLIC

EPIMASTIGOTE

FIG. 10A

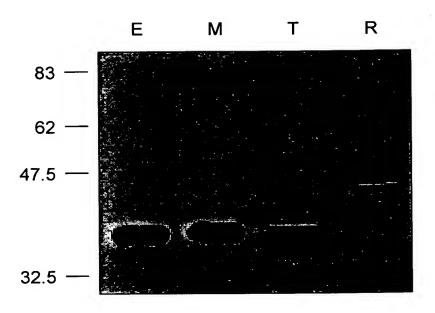


FIG. 10B

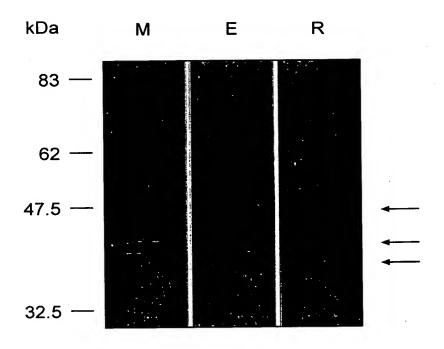


FIG. 10C

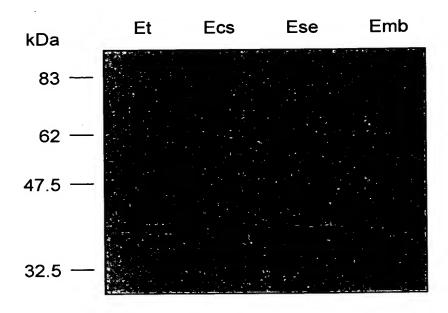


FIG. 10D

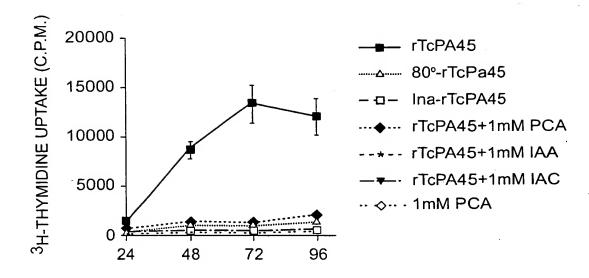


FIG. 11A

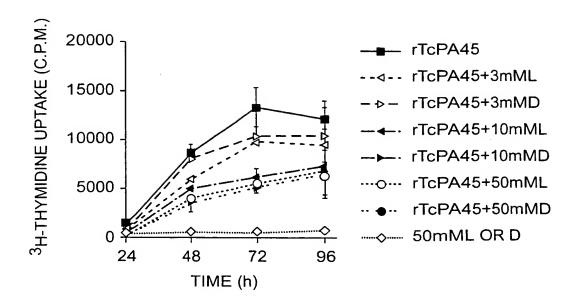
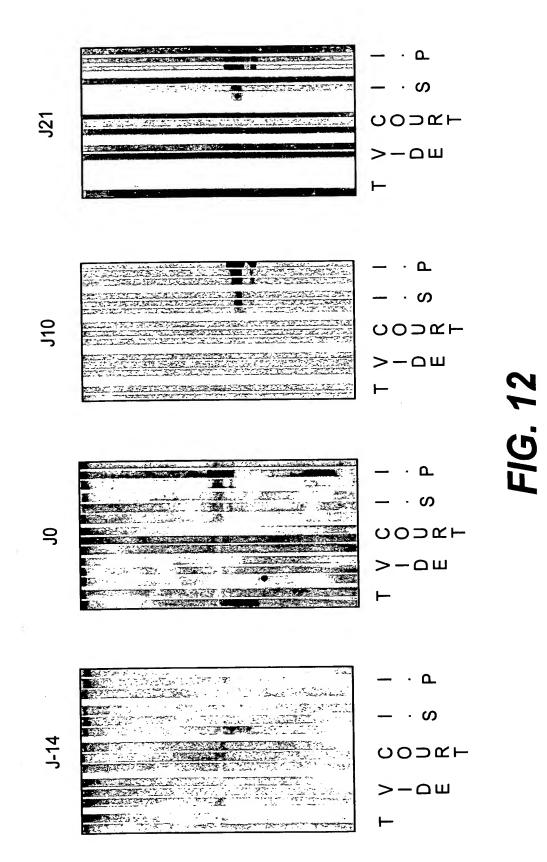


FIG. 11B

Replacement Figure 12
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000



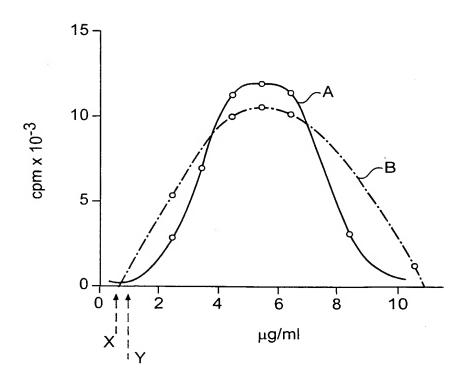


FIG. 13

Replacement Figure 14A and 14B Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

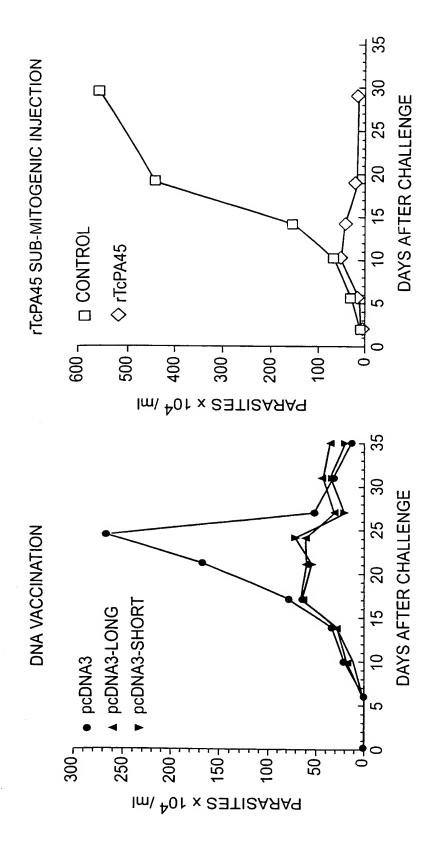


FIG. 14A

FIG. 14B

New Figure 15 Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

SEQ ID NO:2

 $^{\mathrm{L}}$

E S ПС

Ic

 $^{\mathrm{L}}$

| RTGQEKLLFDQKY <u>KIIK</u> GEKKEKKKNQRANRREHQQKREIMRFKKS | 75 |
|---------------------------------------------------------------------------------------------|-----|
| FTCIDMHTEGEAAR <u>IVTSGLPHIPG</u> SNMAEKKAYLQENMDYLRRGIMLEPRGHDDMFGAFLFDPIEEGADLGMVF | 150 |
| MDTGGYLNMCGHNSIAAVTAAVETGIVSVPAK <u>ATNVPVVLDTPAGLVR</u> GTAHLQSGTESEVSNASIINVPSFLYQ | 225 |
| QDVVVVLPKPYGEVR <u>VDIAFGGNF</u> TAIVPAEQLGIDISVQNLSRLQEAGELLRTEINRSVKVQHPQLPHINTVDC | 300 |
| VEIYGPPTNPEANYK <u>NVVIFGNR</u> QADR SPCGT GTSAK <u>MATLYAK</u> GQLRIGETFVYESILGSLFQGRVLGEE | 371 |
| RIPGVKVPVTKDAEEGMLVVTAEITGKAFIMGFNTMLFDPTDPFKNGFTLKQ* 423 | |

FIG. 15

New Figure 16 Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

ì

SEQ ID NO:4

| Ic | MRFKKS | 75 |
|------------------|-----------------------------------------------------------------------------------------|-----|
| ₽ C | FTCIDMHTEGEAAR <u>IVTSGLPHIPG</u> SNMAEKKAYLQENMDYLRRGIMLEPRGHDDMFGAFLFDPIEEGADLGMVF | 150 |
| IC | TC MDTGGYLNMCGHNSIAAVTAAVETGIVSVPAK <u>ATNVPVVLDTPAGLVR</u> GTAHLQSGTESEVSNASIINVPSFLYQ | 225 |
| $^{\mathrm{Ic}}$ | TC QDVVVVLPKPYGEVR <u>VDIAFGGNF</u> FAIVPAEQLGIDISVQNLSRLQEAGELLRTEINRSVKVQHPQLPHINTVDC | 300 |
| $^{\mathrm{T}}$ | VEIYGPPTNPEANYK <u>NVVIFGNR</u> QADR SPCGT GTSAKMATLYAKGQLRIGETFVYESILGSLFQGRVLGEE | 371 |
| EH C) | RIPGVKVPVTKDAEEGMLVVTAEITGKAFIMGFNTMLFDPTDPFKNGFTLKQ* | 423 |

FIG. 16

New Figure 17A
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

SEQ ID NO:7

| | 90 | 12 | 180 | 42 | 270 | 72 | 360 | 102 | 430 | 132 | 520 | 162 | 610 | 192 | 700 | 222 | 790 | 252 |
|---------------------------------|------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------|-------------------|--------------------------------------|-----------------------------------------|
| SIGNAL PEPTIDE | GTCTGTCCCAAACAAAATTTTT | R K S V C P K Q K F F | AAAGCTTCTGTTTGACCAAAAATAT 1 | KLLFDQKY | acaaaaagggaaatt <u>atg</u> cgattt 2 | Q K R E I M R F | | LPHIPGSN1 | | PRGKDDMF 1 | rgcctatttaaatatgtgtggacat : | | | | | SEVSNASIINVPSF | ATTIGGAGGCAATITITICGCCAIT 7 | F G G N F F A I |
| SPLICE LEADER ACCEPTOR SITES | atatggaacagggtatatgcgtaaagt | M R K S | TCCCTTGATCTCTCGAACAGGCCAGGAA | F C V F P L I S R T G Q E K L L F D Q K Y | TCAACGAGCAAACAGGAGAGAACACCA <i>P</i> | E K K K N Q R A N R R E K Q Q K R E I M R | TGAAGCACCACGGATTGTGACGAGTGG1 | E A A R I V T S G | TTATTTGAGGCGTGGCATAATGCTGGA? | QENMDYLRRGIMLEPRGKDDM | CTTGGGCATGGTATTCATGGATACCGGT | E E G A D L G M V F M D T G G Y L N M C G | AATTGTGAGCGTGCCGGCGAAGGCAAC ? | A V E T G I V S V P A K A T N V P V L D | TGGTACTGAGAGTGAGGTGTCAAATGCC | G T E S E V S N A | CTATGGTGAAGTACGGGTTGATATTGC | YGEVRVDIA |
| POLYPYRIMIDINE RICH REGION | ccttttttcttttaaaacaaaaaaattccgggggaatatggaacagggtatatgcgtaaaagtgtctgtc | | TTTTCCGCCTTCCCATTTTTTTTTTTTTTTTTGTGTGTTTTCCCTTGATCTCTCGAACAGGGGCAGGAAAAGCTTCTGTTTGACCAAAAATAT | FSAFPFFFFFCVF | AAAATTATTAAGGGCGAGAAAAAAAAAAAAAAAAAAAATCAACGAGCAAACAGGAGAGAACACCAACAAAAAAAGGGAAATT <u>ATG</u> CGATTT | K I I K G E K K E K K K N | AAGAAATCATTCACATGCATCGACATGCATACGGAAGGTGAAGCAGCACGGATTGTGACGAGTGGTTTGCCACACTTCCAGGTTCGAAT | K K S F T C I D M H T E G | ATGGCGGAGAAGAAAGCATACCTGCAGGAAAACATGGATTATTTGAGGCGTGGCATAATGCTGGAACCACGTGGTCATGATGATATGTTT | M A E K K A Y L Q E N M D | GGAGCCTTTTTATTTGACCCTATTGAAGAAGGCGCTGACTTGGGCATGGTATTCATGGATACCGGTGGCTATTTAAATATGTGTGGACAT | G A F L F D P I E E G A D | AACTCAATTGCAGCGGTTACGGCGGCAGTTGAAACGGGAATTGTGAGCGTGCCGGCGAAGGCAACAAATGTTCCGGTTGTCCTGGACACA | N S I A A V T A A V E T G | CCTGCGGGGTTGGTGCGCGGTACGGCACACCTTCAGAGTGGTACTGAGAGTGAGGTGTCAAATGCGAGTATTATCAATGTACCCTCATTT | PAGLVRGTARLQSGTE | TTGTATCAGCAGGATGTGGTGGTTGTTGCCAAAGCC | LYQQDVVVVLPKPYGEVR <u>VDIAFGGNE</u> FAI |

FIG. 17A

New Figure 17B Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

| :AAT 880 | N 282 | GCA 970 | A 312 | TAT 1060 | <u>Y</u> 342 | 3CGA 1150 | R 372 | ATG 1240 | M 402 | ATT 1330 | 423 | 1/3/1 - היה איירי היה היה היה היה היה היה היה היה היה |
|---------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------|
| STICCCGCGGAGCAGTIGGGAATIGAIAICICCGTICAAAACCICICCCAGGCIGCAGGAGGCAGGAGAACTICIGCGIACIGAAAICAAI | DISVONLSRLQEAGELLRTEIN | CGCAGTGTGAAGGTTCAGCACCCTCAGCTGCCCCATATTAACACTGTGGACTGTGTTGAGATATACGGTCCGCCAACGAACCCGGAGGCA | Q L P H I N T V D C V E I Y G P P T N P E A | NACTACAAGAACGTTGTGATATTTGGCAATCGCCAGGCGGATCGCTCTCCATGTGGGACAGGCACCAGCGCCCAAGATGGCAACATTTAT | GNRQADRSPCGTGTSAKMATLY | SCCAAAGGCCAGCTTCGCATCGGAGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTTCCAGGGCAGGGTACTTGGGGAGGAGCGA | E T F V Y E S I L G S L F Q G R V L G E E R | ATACCGGGGGTGAAGGTGCCGGTGACCAAAGATGCCGAGGAAGGGATGCTCGTTGTAACGGCAGAAATTACTGGAAAGGCTTTTATCATG | T K D A E E G M L V V T A E I T G K A F I M | SGTTTCAACACCCATGCTGTTTGACCCAACGGATCCGTTTAAGAACGGATTCACATTAAAAGCAGTAGATCTGGTAGAGCACAGAAACTATT | | 70H7 KI |
| ACTG | E | AACC | N | GCAP | A | 9999 | ტ | GCTJ | Ø | ACAG | | THE KILL |
| CGI | æ | ACG | ⊱ | ATG | Σ | CII | Н | AAG | × | AGC | | |
| CTG | ᆸ | CCA | വ | AAG | × | GIA | > | GGA | G | IAG | | F |
| CTT | ы | CG(| Ы | 3CC | A | ₽GG(| ĸ | ACT | E⊸ | 1GG | | |
| IGAA (| ш | GGT(| ტ | 'AGC(| ഗ | 3GGC | ŋ | ATT | Н | BATC | | FE |
| GG1 | G | TA(| \rightarrow | ACC | Е | CAC | Ø | GAZ | ഥ | TA(| * | E |
| GCA | Ø | ATA | Н | 299 | G | TIC | ᄄ | GCA | A | CAG | Ŏ | E 6 |
| GAG | ſΞĨ | GAG | ſ±Ĵ | ACA | ⋿ | CIC | П | ACG | ⊏ | AAG | × | 8 |
| CAG | Ŏ | GTT | \gt | 999 | G | TCA | വ | GTA | > | TTA | Ы | E E |
| CTG(| \vdash | IGT | ပ | IGT | ပ | 385 | G | ELLE | \triangleright | ACA | ⊱ | |
| ₹GG(| 24 | 3AC | Q | CA | വ | CIC | П | CIC | Н | ITC | 또 | 7 |
| TCCI | ഗ | GTG(| > | TCT(| ഗ | ATA(| | ATG(| Σ | GGA | P T D P F K N G F T L K Q * | |
| CIC | ы | ACT | ₽ | ည္ဟ | α | AGC | ഗ | 999 | G | AAC | Z | F |
| AAC | Z | AAC | Z | GAT | | GAG | ഥ | GAA | ഥ | AAG | × | E |
| CAA | Ŏ | ATT | Н | 909 | A | TAC | >- | GAG | ഥ | m TTT | ᄺ | É |
| GIT | > | CAT. | H | CAG | Ø | GIG | > | 225 | Ø | 500 | Д | (|
| ľCC | ഗ | SCC | വ | SGC | α | LTT | ഥ | 3AT | | 3AT | Ω | (|
| ATC. | Н | CIG(| - | AAT(| Z | ACT. | ⋿ | AAA(| X | ACG | ₽ | Č |
| 3AT | | CAG | 0 | 3 <u>G</u> C | ധ | 3AG | ഥ | 4CC. | ₽ | CCA | Д | (|
| ATT(| | CT(| വ | TTT(| لتدا | 3GA(| G | 3TG | \triangleright | 3AC(| Ω | Ė |
| 3GA | 5 | CAC(| 田 | TATA. | щ | \TC(| Н | 333 | വ | TT! | ᄄ | È |
| TTG | ⊣ | CAGC | 0 | ${ m GTG}_{I}$ | Λ | 2000 | 8 | GTG(| > | CTGI | ᆸ | |
| J.A.G. | O | H | > | FTT(| \triangleright | Ĭ | ⊢⊐ | 4AG | × | 4TG | Σ | |
| 3AG(| ᇤ | AAG(| × | AAC(| z | CAG(| Ø | GIG | \triangleright | ACC | ⋿ | ě |
| 333 | A | F. F. S. T. G. | \triangleright | AAG. | × | 395 | G | 366 | 5 | AAC. | Z | 1 |
| 222 | V P A E Q L G I | AGTO | R S V K V Q H P | TAC | N Y K N V V I F | AAA(| A K G Q L R I G | ညည | V P V K V P V | TTC | G F N T M L F D | |
| J.L. | > | 29 | α | AAC | Z | 333 | Ø | 4IA | Н | 3GT | G | 4 |

ATTATTAAATTTTTTTTTTTGGGGTTTCAACGGTACCGCGTTGGGAGCAGGGAAGCGATAGCGGCCGGACAATTTTTTGCTTTTAT 1510

TITCATITICATCITCCTACCCAACCCCCTTGGTTCCACCGGTCGCGGGGGTCTTGTGGGGTGGAGGAGTCCTAAATCCCGCACCTCGG 1600

AGGAATAAACATATTTCAATTTCATATCTTGGAATCAAAAGGCAT

1651

POLYADENILATION SITE

Obs: UNDERLINED THE SEQUENCED PEPTIDES USED TO DEDUCE DEGENERATED PRIMERS FOR CLONING

(b) NUCLEOTIDE SEQUENCE AND PEPTIDE SEQUENCE TcPA45

FIG. 17B

SEQ ID NO:8

| 90 | 12 | 180 | 42 | 270 | 72 | 360 | 102 | 430 | 132 | 520 | 162 | 610 | 192 | 700 | 222 | 790 | 252 | 880 | 282 | 970 | 312 |
|-----------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------------------------------------------------------------------------|-----|-----|-----|--------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------|--------------------------------|
| ATGCGTAAAAGTGTCTCCCAAACAAAAATTTTT | MRKSVCPKOKFF | THE TRANSCEASE AND THE PROPERTY OF STREET TO SELECT TO THE TOTATION OF THE TOT | S I I G A A C A E | GABAAGAAAAAAATCAACGAGCAAACAGGAGAGAGACACCAACAAAAAAGGGAAATT <u>ATG</u> CGATTT | KITKGEKKEKKNORANRREHQOKREIMRF | | | | | | | | | CCTGCGGGTTGGTGCGCGGTACGGCACCCTTCAGAGTGGTACTGAGAGTGAGGGTGTCAAATGCCAGTATTATCAATGTACCCTCATTT | | | | GATATCTCCGTTCAAAACCTCTCCAGGCTGCAGGAGGCAGGAGAACTTCTGCGTACTGAAATCAAT | | CECAGTETE GAAGETTCAGCACCCTCAGCTGCCCCATATTAACACTGTGGACTGTGTTGAGATATACGGTCCGCCAACGAACCGGAGGCA | RSVKVQHPQLPHINTVDCVEIYGPPTNPEA |

New Figure 18B
Continuation Application of 09/725,945
Inventors: Minoprio et al.
Attorney Docket No. 03495-0200-01000

| 1060 | 342 | 1150 | 372 | 1240 | 402 | 1330 | 423 | 1420 |
|------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------|
| AACTACAAGAACGTTGTGATATTTGGCAATCGCCAGGCGGATCGCTCTCCATGTGGGACAGGCACCAGCCCCAAGATGGCAACATTTAT 1060 | NYKNVVIFGNROADRSPCGTGTSAKMATLY 342 | GCCAAAGGCCAGCTTCGCATCGGAGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTTCCAGGGCAGGGTACTTGGGGAGGAGGAGTA 1150 | AKGOLRIGETFVYESILGSLFQGRVLGERR 372 | ATACCGGGGGGGGGGGGCCGGGGGACCAAAGATGCCGAGGAAGGGATGCTCGTTGTAACGGCAGAAATTACTGGAAAGGCTTTTATCATG 1240 | TPGVKVPVTKDAEEGMLVVTAEITGKAFIM 402 | GGTTTCAACACCCATGCTGTTTGACCCCAACGGATCCGTTTAAGAACGGATTCACATTAAAGCAGTAGATCTGGTAGAGCACAGAAACTATT 1330 | GFNTMLFDPFKNGFTLKQ* | GGGGAACACGTGCGAACAGGTGCTGCTACGTGAAGGGTATTGAATGAA |
| BAACC | Z | CAGC | 0 | $3G\overline{\Gamma}G\overline{R}$ | Λ | CACCA | E-4 | CGTG(|
| ZAAG | × | ₹GGC | Ŋ | 3666 | יי | CAAC | z | ACAC |
| TAC | ; - | Xaaa | × | | Д | LTTC | 드 | 3GAA |
| AAC | Z | : <u> </u> | V | ATA ATA | - | ĞĞI | Ü | 999 |

ATTATTAAATTTTTTTTTTTGGGGTTTCAACGGTACCGCGTTGGGAGCAGGGAAGCGATAGCGGCCGGACAATTTTTGCTTTTAT 1510

TITCATITICATCITCCTACCCAACCCCCTIGGTICCACCGGTCGCGGGGGTCTTGIGGGTGGAGGAGTCCTAAAICCCGCACCTCGG 1600

AGGAATAAACATATTTCAATTTCATATCTTGGAATCAAAAGGCAT

1651

POLYADENILATION SITE

Obs: UNDERLINED THE SEQUENCED PEPTIDES USED TO DEDUCE DEGENERATED PRIMERS FOR CLONING

NUCLEOTIDE SEQUENCE AND PEPTIDE SEQUENCE TcPA45

FIG. 18B

SEQ ID NO:9

| 27 | | 36 | 10, | 43 | 13, | 521 | 16, | 61 | 19, | 70 | 22, | 79 | 25, | 88 | 28, | 97 | 31, | 106 | 34. | 115 | 37 |
|-----------------------------------------|-------------------|------|-----------|------------|----------|------|-------------|----------------|------------------|------|------------------|---------------|------------------|-----|------------------|-----------------------------------------------------------------------------------------------|-------------|---------------|------------------|------|------------------|
| CGAACAGGCCAGGAAAAGCTTCTGTTTGACCAAAAATAT | Y | TTT | ᄄ | AAA | Z | TLL | ഥ | ICAT | н | CACA | | \TTT | ഥ | ATT | Н | GTTCCCGCGGAGCAGTTGGGAATTGATATCTCCGTTCAAAACCTCTCCAGGCTGCAGGAGGAGGAGGAACTTCTGCGTACTGAAATCAAT 97 | Z | 3GCA | A | TAT | \succ |
| AAA | × | (CG/ | ĸ | TCC | ഗ | 'AT(| \boxtimes | 199 | Ŋ | GA(| | TCI | လ | 25 | A | AT(| Н | :GA(| ſΞÌ | CTJ | П |
| CAA | Ŏ | ATG | Σ | .GGT | ٥ | GAI | | TGI | ပ | CTG | ы | $\frac{9}{2}$ | Д | TTC | 뙈 | GAA | ഥ | 900 | Д | ACA | ₽ |
| GAC | Ω | ATT | Н | CCA | ם | GAT | Ω | ATG | Σ | GTC | > | GTA | > | TTT | [교 | ACT | <u>E-</u> - | AAC | Z | GCA | A |
| ${ m TTT}$ | ᄄ | GAA | ഥ | ATT | Н | CAT | н | AAT | Z | GTT | \triangleright | AAT | Z | AAT | Z | CGT | ĸ | ACG | ⊟ | ATG | Σ |
| CTG | ᆸ | AGG | \simeq | CAC | 田 | GGT | G | TTA | ⊢⊣ | 555 | ᆈ | ATC | Н | 255 | ပ | CIG | П | CCA | Д | AAG | × |
| CTT | T G Q E K L L F D | AAA | × | CCA | പ | CGT | \simeq | \mathtt{TAT} | \succ | GTT | > | ATT | Н | GGA | O | CTT | Ы | 999 | Д | 229 | Ø |
| AAG | X | CAA | Ø | TTG | П | CCA | ы | 399 | G | AAT | Z | AGT | ഗ | TTT | Œ | GAA | ഥ | GGT | G | AGC | ഗ |
| GAA | Œ | CAA | Ŏ | GGT | വ | GAA | ഥ | GGT | G | ACA | E | 909 | A | GCA | A | GGA | Ç | TAC | \succ | ACC | ⊏ |
| CAG | Ŏ | CAC | н | AGT | S | CTG | ᆸ | ACC | ⊱ | GCA | Ø | AAT | z | ATT | Н | GCA | K | ATA | Н | 299 | G |
| <u> </u> | ᠐ | GAA | [고] | ACG | ₽ | ATG | Σ | GAT | Ω | AAG | × | TCA | ഗ | GAT | | GAG | ഥ | GAG | ഥ | ACA | ⊱ |
| ACA | ⊏ | AGA | \simeq | GTG | Λ | ATA | Н | ATG | Σ | 929 | A | GIG | \triangleright | GIT | | CAG | Õ | GII | \triangleright | 999 | 9 |
| CGA | ~ | AGG | α | ATT | Н | 399 | G | TIC | بعا | 900 | Ц | GAG | Œ | 990 | α | CIG | H | IGI | ပ | TGT | ပ |
| | | AAC | Z | 990 | ~ | CGT | ĸ | GTA | \triangleright | GTG | > | AGT | വ | GTA | \triangleright | AGG | \simeq | GAC | | CCA | വ |
| | | GCA | V | GCA | A | AGG | 24 | ATG | \mathbb{Z} | AGC | ഗ | GAG | [±] | GAA | Œ |]]C | ഗ | GIG | > | TCI | ഗ |
| | | CGA | \simeq | GCA | A | TTG | ᆸ | 299 | G | GTG | \triangleright | ACT | ⊱ | GGT | G | CIC | Ы | ACT | ⊱⊣ | 262 | α |
| | | CAA | Õ | GAA | ഥ | TAT | \succ | TIG | Ы | ATT | 11 | GGT | G | TAT | \succ | AAC | Z | AAC | Z | GAT | |
| | | AAT | N | GGT | G | GAT | Ω | GAC | | GGA | IJ | AGT | ഗ | 5 | വ | CAA | Ŏ | ATT | Н | 909 | A |
| | | AAA | × | GAA | ഥ | ATG | ∇ | GCT | K | ACG | ⋿ | CAG | Ŏ | AAG | × | GTT | > | CAT | 田 | CAG | 0 |
| | | AAA | × | ACG | ₽ | AAC | Z | 099 | 5 | GAA | 됴 | CTT | П | CCA | Ы |)][| ഗ | $\frac{2}{2}$ | Д | 090 | 24 |
| | | AAG | × | CAT | 二 | GAA | ഥ | GAA | ഥ | GTT | > | CAC | 田 | TIG | П | ATC | Н | CIG | ⊷ | AAT | Z |
| | | GAA | ഥ | ATG | Σ | CAG | Ŏ | GAA | [±] | GCA | Ø | GCA | A | GIG | \triangleright | GAT | Ω | CAG | Õ | 299 | G |
| | | AAA | X | GAC | Ω | CTG | ᆔ | ATT | Н | 909 | Ø | 'ACG | ⊱ | GIT | \triangleright | ATT | Н | CCI | Д | TTI | ᄄ |
| | | AAA | × | ATC | ш | TAC | >-1 | CCI | വ | ACG | ⊢ | GGT | G | GIG | \land | GGA | G | CAC | \equiv | ATA | Н |
| | | GAG | 띠 | 13C | ပ | GCA | A | GAC | | GTT | \gt | 292 | ద | GIG | > | TTG | H | CAG | Ŏ | GIG | \triangleright |
| | | 299 | G | ACA | ⊟ | AAA | × | TTT | ᄺ | 909 | Ø | GTG | > | GAT | Ω | CAG | Ø | GII | > | GTT | \triangleright |
| | | AAG | × | TTC | ഥ | AAG | × | TTA | Ы | GCA | A | TTG | П | CAG | Õ | GAG | ഥ | AAG | × | AAC | Z |
| | | ATT | щ | TCA | ഗ | GAG | 더 | TTT | ഥ | ATT | Н | 999 | ധ | CAG | Õ | 909 | A | GTG | > | AAG | × |
| | | ATT | | AAA | × | 909 | A | 225 | A | TCA | ഗ | 909 | A | TAT | \succ | ညည | Д | AGT | S | TAC: | \succ |
| | | AAA | × | AAG | × | ATG | Σ | GGA | G | AAC | Z | CCT | Щ | TTG | П | GTT | > | 293 | α | AAC | Z |

FIG. 19A

1330 ATTATTAAATTTTTTTTTTGTTTTGGGGTTTCAACGGTACCGCTTGGGAGCAGGGAAGCGATAGCGGCCGGACAATTTTTTGCTTTTAT 1600 TTTCATTTTCATCTTCCTACCCAACCCCCTTGGTTCCACCGGTCGCGGGGGTCTTGTGGGGTGGAGGAGTCCTAAATCCCGCACCTCGG 1651 ${\color{red} A} {\color{red} K}$ G Q L R I G E T F V Y E S I L G S L F Q G R V L G E E R ATACCGGGGGGTGAAGGTGCCGAAAGATGCCGAGGAAGGGATGCTCGTTGTAACGCCAGAAATTACTGGAAAGGCTTTTATCATG GCCAAAGGCCAGCTTCGCATCGGAGAGACTTTTGTGTACGAGAGCATACTCGGCTCACTCTTCCAGGGCAGGGTACTTGGGGAGGAGCGA AGGAATAAACATATTTCAATTTCATATCTTGGAATCAAAGGCAT

POLYADENILATION SITE

Obs: UNDERLINED THE SEQUENCED PEPTIDES USED TO DEDUCE DEGENERATED PRIMERS FOR CLONING

NUCLEOTIDE SEQUENCE AND PEPTIDE SEQUENCE TcPA45

FIG. 19B

New Figure 20 Continuation Application of 09/725,945 Inventors: Minoprio et al. Attorney Docket No. 03495-0200-01000

SEQ ID NO:10

SIGNAL PEPTIDE

ATGCGTAAAAGTGTCTGTCCCAAACAAAAATTTTTT

TTTTCCGCCTTCCCATTTTTTTTTTTTTTTGTGTGTTTCCCTTGATCTCT

NUCLEOTIDE SEQUENCE To SIGNAL SEQUENCE To PA45 F/G, 20

SEQ ID NO:11

| 360 | 102 | 430 | 132 | 520 | 162 | 610 | 192 | 700 | 222 | CCTGCGGGGTTGGTGCGCGGTACGGCACCCTTCAGAGTGGTACTGAGAGTGAGGGGTGTCAAATGCGAGTATTATCAATGTACCCTCATTT 790 | 252 | 880 | 282 | 970 | 312 | 1060 | 342 | 1150 | 372 | 1240 | 402 |
|-----------|--------------|----------------------------------------------------------------------------------------------------------------|------------------|---------------|-------------------|---------------|-----------------------------------------------|------------------|------------------|-------------------------------------------------------------------------------------------------|------------------|------|------------------|---------|----------|------------------------|-----------------------------------------|------------|----------|------|----------|
| TTI | ᇤ | AAT | z | TTT | ᄄ | CAT | Н | ACA | 터 | TTT | ഥ니 | ATT | Н | AAT | Z | GCA | A | TAT | × | CGA | ~ |
| ATGCGATTT | \simeq | a a ga a a tentica caticca ticca ticca ta ciga a getica a geneca concidentica con concount con a constituit de | ഗ | ATG. | Σ | GGA(| G | GAC, | | TCA | ഗ | CC, | A | ATC, | ⊢ | GAG | ഥ | CTT | ᆈ | GAG | ഥ |
| ATG(| \mathbf{z} | GGT | ص | GAT. | Ω | IGI | ی | CTG | ᆈ | ညည | വ | TIC | ഥ | GAA | [고] | 922 | വ | ACA | ₽ | GAG | ഥ |
| | | CCA | а | GAT | Ω | ATG | $\mathbf{\Xi}$ | GTC | \gt | GTA | > | TTT | ᄄ | ACT | ₽ | AAC | Z | GCA | A | 999 | Ŋ |
| | | ATT | Н | CAT | 二 | AAT | z | GTT | > | AAT | Z | 'AAT | Z | CGI | \simeq | ACG | E- | ATG | Σ | CTI | щ |
| | | CAC | н | GGT | Ŋ | TTA | П | 555 | ы | ATC | Н | 299 | ß | CTG | Н | CCA | Δ | 'AAG | X | GTA | > |
| | | CCA | വ | CGT | ĸ | TAT | \succ | GTT | > | ATT | Н | GGA | G | CTI | Ы | 555 | а | 360 | A | ZAGG | 24 |
| | | TTG | П | CCA | വ | 099 | Ŋ | AAT | Z | AGI | လ | TTI | [±4 | 1GAP | Œ | 7667 | G | ,AGC | S | 3660 | G |
| | | GGT | ഗ | GAA | ഥ | ,GGT | G | ACA | E | 305 | A | [GCP | A | 1667 | · (b | ATA(| ⋈ | CACC | ⊢ | CCAC | 0 |
| | | AGI | ഗ | CTC | П | 'ACC | E | 3GC/ | A | AAAT | Z | [AT] | Н | 3GC/ | A | 3AT? | Н | 16G(| G | CTT(| [五시 |
| | | BACC | ₽ | AATG | \boxtimes | 3GAT | | 3AAG | × | STC | ഗ | [GA] | | 3GA(| 됴긔 | I'GA(| 더 | 3AC1 | ⊣ | ACT(| щ |
| | | 16T0 | \triangleright | ATF | | CAT | $\mathbf{\Sigma}$ | 3950 | Ø | 3GT(| \triangleright | 3GT. | > | 3CA(| Ø | IGT. | \triangleright | 166(| G | CIC. | ഗ |
| | | 3AT! | H |] [99] | G | ATT(| ĹŦı | 300 | വ | IGA(| ഥ | ACG(| 24 | 3CT(| 口 | CIG | C | ATG | ى د | 990 | G |
| | | ACG(| α | 3CG. | α | 3GT | \triangleright | CGT(| \triangleright | GAG | ഗ | AGT. | \triangleright | CAG | \simeq | GGA | Ω | TCC | Д | ACT | Н |
| | | AGC/ | K | 3AG(| 24 | CAT(| $\mathbf{\Sigma}$ | GAG(| ഗ | TGA(| [±] | TGA | 됴긔 | CIC | ഗ | TGT | \wedge | CIC | ഗ | CAT | Н |
| | | AGC. | A | TTT(| Н | 999 | 9 | TGT(| \wedge | TAC | ⊱ | IGG | G | CCI | щ | CAC | ⊢ | DOL | 8 | GAG | S |
| | | IGA | ഥ | TTA | >-1 | CTT | П | AAT | Н | TGG | G | CTA | ≻ | AAA | Z | TAA | Z | GGA | | CGA | [32] |
| | | AGG | G | GGA | Ω | TGA | | 999 | 9 | GAG | ഗ | 229 | Д | TCA | 0 | TAT | ⊢ I | 299 | Ø | GTA | >- |
| | | GGA | ᇤ | CAT | $\mathbf{\Sigma}$ | ညည | Ø | AAC | E-I | TCA | O | AAA | × | CGT | > | CCA | ======================================= | CCA | 0 | īGī | > |
| | | TAC | E | AAA | Z | AGG | G | TGA | 됴긔 | CCI | Н | 229 | Д | CIC | ഗ | 229 | <u>Д</u> , | TCG | <u>~</u> | TIT | <u>-</u> |
| | | GCA | H | GGA | [±] | AGA | ᇤ | AGT | > | ACA | H | GIT | ⊢ | TAT | - | GCT | Ι (| CAA | | GAC | <u>-</u> |
| | | CAT | Σ | GCA | 0 | 'TGA | [±] | 299 | Ø | 099 | ₩. | TGI | > | TGA | | TCA | _ | TGG | | AGA | |
| | | CGA | | CCL | <u>⊢</u> ⊒ | TAT | H | _))) | Ø. | TAC | <u></u> | GGT | > | AAT | 7.0 | | | ב דידאר | 1.5 | | |
| | | CAT | - | ATA | 74 | $\frac{1}{2}$ | С. | TAC | | 1000 | ~ | .gg. | <i>></i> | 999 | | 1GCZ | | rga1 | | 3CA1 | ~ |
| | | ATG | | AGC | A, | TGA | | .GGT | <u>ح</u> ز | 305 | <u>ιχ</u> , | TGI | · · | GTJ | I (| יַב <i>ו</i> ל זברי | | ביים | | | |
| | | CAC | <u> </u> | GAA | 24 | ATT | <u> T </u> | 'AGC | A | J.GGT | ~ | GGZ | | 19C7 | | \GG1 | | , LESS | | 195 | |
| | | T-T-T-T-T-T | <u> F</u> | GAA | × | TTT | _ |) [] [] | | GTI | | GCA | | ,GG/ | | 'GAZ | 1 / | GA7 | | CCZ | |
| | | ATC | , (C) | `GGA | | ZTT | | , AAT | | 995 | | TCZ | | , jej j | 7 |]TG] | | ACA2 | · · | ¶AG(| · |
| | | (GAA |) !X | ָ הַפָּקרָ | Z V | ;AGC | ۲. |)CTC | |);TG(| 7 | IGT. | | וידוני | | 3CA(| ~ | \CT7 | | CA | |
| | | Z | , ** | Ā | : — | · 55 | , – | A | | ່ ປ | - | * E | _ | ئ : | , — | \ddot{c} | , — | À | ; — | · & |) |

FIG. 21A

| 1330 | 423 | 1420 | 7 | NTCT |
|--------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------|
| ATACCGGGGGGTGAAGGTGCCGGTGACCAAAGATGCCGAGGAAGGGATGCTCGTTGTAACGGCAGAAATTACTGGAAAGGCTTTTATCATG 1330 | IPGVKVPVTKDAEEGMLVVTAEITGKAFIM 423 | GGTTTCAACACCATGCTGTTTGACCCAACGGATCCGTTTAAGAACGGATTCACATTAAAGCAGTAGATCTGGTAGAGCACAGAAACTATT 1420 | GFNTMLFDPTPFKNGFTLKQ* | GGGGAACACGTGCGAACAGGTGCTGCTACGTGAAGGGTATTGAATGAA |
| TACC | д П | GTTT | G | 3GGGA |
| ℴ | | G | | 9 |

ATTATTAAATTTTTTTTTTTGGGGTTTCAACGGTACCGCGTTGGGAGCAGCGGAGCGATAGCGGCCGGACAATTTTTTGCTTTTAT 1600

AGGAATAAACATATTTCAATTTCATATCTTGGAATCAAAAGGCAT

FIG. 21B